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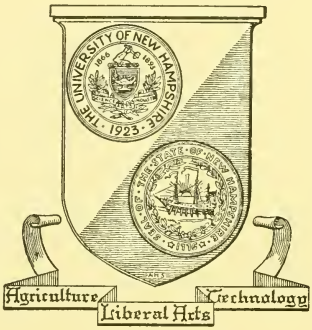

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Many sawmills use both hardwood and softwood logs.

Buying Practices of Wood-Using Industries in New Hampshire

By Lewis C. Swain and Oliver P. Wallace

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By Lewis C. Swain and Oliver P. Wallace*

DURING the summer of 1955 conferences were held with about half of the owners, or their representatives, of wood-using industries in New Hampshire. It was hoped that information could be secured through these meetings to give a somewhat broader view of marketing forest products, particularly between the owner and purchaser of raw materials. In keeping with a previous study, the results of which were published in June, 1955, under the title of 'Marketing Forest Products in New Hampshire,' Station Bulletin 420, a uniform schedule was used for recording all pertinent information.

By far the largest users of wood grown in New Hampshire are the sawmills. This is a well known fact, but what kind of a market they offer to the woodland owners is not so clearly understood. In terms of volume consumed, sawmills utilize approximately two-thirds of the harvested timber, converting it into what may be termed sawmill products.

Next in order of importance, also by volume, are the pulp mills. There are four in New Hampshire. Other individual wood-using industries are smaller in raw material requirements, but their fairly uniform location throughout the state offers favorable outlets for local timber. These factories manufacture such items as wood boxes, dowels, bobbins, heels, blanks for furniture, excelsior, ladder rungs, veneer, crutches, and cooperage.

In 1954 the Forestry and Recreation Commission reported 484 registered sawmills. The present study includes information secured from 222 during the same year. Seventy-four of the portable mills are the property of 70 individual owners. Similarly in the stationary or permanent class, 118 owners have 128 mills.

A total of 245,831,000 board feet of lumber was cut by 202 sawmills. Twenty mills did not indicate how much they cut and were not classified. During the same period four pulp mills consumed 128,000 cords of New Hampshire grown timber. An additional 12,630 cords went into other industrial use. To these figures must be added 22,740,000 board feet used by mills other than pulp mills or sawmills.

Expressed in board feet, the total volume of wood produced was 315,180,000. This represents raw material grown in New Hampshire and processed in New Hampshire mills. There is an additional amount which is secured from sources outside the state, and an amount grown in New Hampshire, but shipped to outside consumers. No records of these imports and exports have been secured for this study.

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The sawmills sampled are separated into classes according to reported production. Class I includes mills which annually saw from 1,000 to 100,000 board feet, class II, those from 101,000 to 500,000, class III, from 501,000 to 1,000,000, and class IV, over 1,000,000.

Table 1. Number of Sawmills Sampled and Number of Sawmills Registered by the State Forestry Department, Separated into Size Classes

	Sawmill Size Classes				
	I	II	III	IV	
Operating Sawmills Registered by State Forestry Sept., 1954	134	144	63	97	438
Number Sawmills Taken in Sample	24	52	36	90	202
Number of Sawmills as a Percent of Total Registered	17.2	43.7	57.1	92.8	

It is sometimes remarked that the small woodland ownerships in New Hampshire present difficulties in doing business. The results of this study indicate that 92 percent of the mills are making purchases from land owners in the 15- to 500-acre ownership class. This shows that business opportunities are favorable for buyer and seller alike.

Table 2. Volume Cut by Sawmills, Separated by Sawmill Size Classes

	Classes			
	I	II	III	IV
Total Number Mills	24	52	36	90
Volume in M Board Feet	1,808	15,069	30,086	198,868
Percent of Total Volume	0.8	6.1	12.2	80.9

Market Stability

Since sawmill owners purchase approximately two-thirds of the annual timber harvest, a question may arise about their stability. Thirty-six per cent have been in business over 20 years and only 16 percent less than five years. The mills are well distributed throughout the State and offer a steady market for stumpage and logs.

All other wood-using industries, including pulp mills, show even greater stability when measured by the number of years in business.

A maximum figure of 100 years or more in business includes sawmills, pulp mills, and other industries.

Table 3. All Sawmills — Number of Years in Business

Class	Max.	Min.	Total Years	Mill Owners	Ave. Years	10 Years or Less	11-20	Over 20
I	50	1	344	24	14.3	12	7	5
II	172	3	1227	51	24.0	23	9	18
III	150	4	773	37	20.9	16	10	11
IV	96	2	1841	80	23.0	26	26	38
				192	21.8	77	52	72
Not Classified*	100	½	244.5	10	24.4	4	1	5

* Production volume not furnished by owner.

Table 4. Other Mills — Number of Years in Business

Other Mills	Max.	Min.	Total Years	Mill Owners	Ave. Years	10 Years or Less	11-20	Over 20
Pulp Mills	100	14	314	4	78.5		1	3
Misc. Other Mills	100	2	680	25	27.2	10	5	10

Ownership of forest land may also be taken as a measure of stability. Fifty-nine percent of all sawmill owners possess timberland, almost half of them to an extent of 500 acres or more. Seventy three percent of those owning forest land have holdings of at least 100 acres.

Table 5. Sawmill Owners — Forest Land Ownerships

Class	No. Owning Forest Land	Acres			Percent of All Owners
		Under 500	500–1000	Over 1000	
I	18	15	2	1	75
II	34	28	5	1	66.7
III	16	11	7	8	43.2
IV	45	16	10	19	56.2
Total	113	70	24	29	59.0

One of the questions raised with each mill owner was whether he was increasing or decreasing his forest holdings. None were selling, and 24 per cent were purchasing from time to time.

Out of a total of 202 sawmills reporting, 180 operate throughout the year. This indicates a ready, year-round market for sawlogs.

Changes in Scale of Operations

Changes in scale of operations can be indicated as increases or decreases (if there have been any changes). Those of greatest magnitude have been in the pulp mills where expansion in capacity and changes of process are notable.

Hardwood logs are debarked and sawed to length for pulpwood bolts.

As a whole, 17 percent have increased their scale of operations and 5 percent have decreased. The majority of mills have remained at a constant level.

The increases in the case of sawmills have been in volume of business and the acquisition of forest land. Also, 19 percent of all mills have been obtaining an increasing amount of timber from their own lands.

Therefore, it is evident that New Hampshire wood-using industries, which are first handlers of wood as raw material, are substantial when judged by their increase in forest holdings, year-round operations, characteristic stability of location, and definite indication of increase in the size of operation.

Raw Material Requirements

Form of Purchases

More than nine-tenths of the wood-using industries purchase standing timber as a means of satisfying their raw material requirements. Over three-quarters buy logs either at the roadside or mill, and over half purchase stumpage and logs. One-tenth of the mills depend entirely on delivered logs and bolts.

Type of Woods Operation

Woods operations can be handled by regularly employed mill crews or by contract loggers. Large mills depend mainly on contractors. Smaller ones usually have their own woods crews. Wood procurement as a whole is about equally divided between contract and company operations.

Species Used

Out of 268 wood-using mills, 178 procure white pine as raw material. This represents 66 percent of the industry. Hemlock is nearly as important with 63 percent reporting its use. Spruce follows with 27 percent and hardwoods 8 percent. Other hardwoods are used in producing veneer, turnings, etc.

Table 6. Species Used by All Mills

	White Pine	All Pines	Hemlock	Spruce	Hard-woods	Special Hard-woods
Total of Mills Reporting	198	31	169	62	21	34
Percentage of All Mills	66	11	63	22	8	12

Quality Requirements

The only evidence of quality as a requirement in procuring raw material for sawmills appears as an indicated willingness to pay a price differential. In mills other than sawmills, three have written grades and ten use printed specifications.

A special study was made at 32 sawmills in order to determine the dimensions of the average white pine log. The sample consisted of 640 logs. Twenty were measured at each mill. They were chosen as the next logs to be sawed on the mill deck. The average length was found to be 10 feet and the average diameter 9.09 inches. The size of log appears to indicate lack of quality since larger diameters and greater lengths could be expected to yield higher grade lumber.

Measurement Practices

The New Hampshire or caliper log rule is used by a majority of mills. Out of 135 mills reporting, 62 used the New Hampshire and 39 the International. Other rules used are the Vermont and the cord. Mill tally or measurement of each piece when sawed is used in few mills.

In connection with purchases of stumpage, the methods of measurement are cruising, ocular estimate, log volume scale, and mill tally when sawed. Here the ocular estimate was used by 43.5 percent of the mills, mill tally by 28.7 percent, log volume scale by 16.7 percent, and cruising information by 11.1 percent.

Transportation

There is no very clearcut pattern or custom as to whether mill owners use their own trucks and drivers or employ contractors. Out of 264 mills, 82 have their own trucks, 89 employ contract truckers, and 88 both own trucks and hire contractors. Eleven of these also depend on other types of transportation such as rail haul, and the remainder consist of portable mills which operate at woodland settings and do no trucking.

Mills in the higher production class secure raw material from greater distances than those of the lower production class.

Table 7. Transportation of Raw Materials

Trucking				
Use Own Trucks	Contract Trucking	Both	Use Other Facilities	Portable Mills Moving Onto Lots — No Trucking
82	89	88	11	20

Sawmills Class	Hauling Distances Miles			
	1-10	11-25	26-50	50+
I	14	2	2	1
II	23	19	5	0
III	9	15	6	1
IV	6	22	37	13
Other Mills	6	11	8	12
Total	58	69	58	27

The smaller sawmills make a practice of using their own crews for logging while the larger mills customarily contract their logging operations. About ten percent of all mills conduct no logging operations.

Table 8. Source of Woods Labor for Logging

Sawmills Class	Contracts Logging	Uses Own Crew	Both	Buys Logs (No Woods Labor)
I	3	23	—	4
II	9	38	3	3
III	20	15	4	4
IV	72	21	10	2
Total Sawmills	104	97	17	13
Other Mills	13	7	4	13
Total All Mills	117	104	21	26

Buying Practices — Purchasing Agreement

When written agreements are used in procuring raw materials, nine-tenths of them are drawn up by the purchaser. As a whole, seven-tenths of the sawmill buyers make verbal agreements only. Among the other wood-using industries, more than half follow the same practice.

Table 9. Range of Prices Paid

Type of Mill and Point of Purchase	White Pine	Hemlock	Species W. P., Hem., Sp.	Hardwoods	Spruce, Fir	Spec. Hardwoods
Portable Mills (Prices per M.b.f.)						
Stumpage	$8.25–15.00	$9.43–15.43	$8.92–14.73			
Roadside	28.50–32.50	27.50–32.25	27.55–33.46			
Mill Yard	35.50–41.00	36.33–40.00	34.67–40.00			32.00–45.00
Stationary Mills (Prices per M.b.f.)						
Stumpage	9.22–21.00	10.00	9.30–15.75			12.00–18.00
Roadside	25.83–35.83	27.50	29.10–34.50			
Mill Yard	34.10–43.00	35.00	35.00–40.00	$40.00–52.00	$45.00	35.00–60.00
Pulpwood Mills (Prices per cord)						
Stumpage	0.50– 2.00			.75– 2.50		
Roadside				12.00–14.75	13.00–14.50	
Delivered	19.00–rough			19.00–27.00 rough	18.00–22.00 rough	
	22.00–peeled			23.50–25.00 peeled	23.00–24.00 peeled	
Other Mills (Prices per M.b.f. except where indicated otherwise)						
Stumpage	($3.00/cd)		(10.00–15.00/cd)		($5.00/cd)	($4.00–12.00/cd)
	10.00–12.50	10.00	9.80–16.20	12.50–17.50	15.00	13.67–19.00
Roadside	(10.00/cd)			(19.00/cd)	(16.50/cd)	
	12.00–27.50	25.00	30.00	43.00	32.00	55.00
Delivered	(14.00/cd)			(24.00–30.00/cd)	(20.00/cd)	
	31.00–37.70	35.00	38.75–42.50	46.50–56.00	40.00	51.20–73.75

Prices

The stationary mill as a market for standing timber offers somewhat higher prices than the portable mill for white pine, hemlock, and spruce. There is a difference of about one dollar per thousand board feet on minimum prices paid and six dollars on the maximum. While the higher maximum prices paid by stationary mills could be directly attributed to quality, the timber owner selling in this market has a better opportunity because of a greater range of prices. Hence, his low grade product has a slightly greater promise of higher returns and the better grades considerably more.

There is a price gradient in geographical location within the State which can be seen in reports from sawmills by counties. For example, Carroll County commands the number one price position, followed by Grafton County. These counties constitute a belt which extends across the State. One is in the Saco River drainage system and the other, for the most part is in the Connecticut River drainage system.

Hardwoods required for special purposes such as birch, ash, hard maple, and red oak bring the best prices. In fact, hardwoods in general can be classed as high value species. Possible exceptions to this rule are beech and miscellaneous hardwoods for pulpwood.

Disposal of Manufactured Products

About half of the sawmills sell their output in local markets. One third sell both in local and distant markets and one-sixth to distant markets only.

Both portable and stationary sawmills sell a high proportion of their products to fabricators. Retailers and consumers each secure about one-third of the total output in almost identical amounts. Other wood-using industries sell the greater amount of their product to consumers.

Table 10. Disposal of Manufactured Products by Mills

	Market Location			Buyers of Manufactured Products			
Mill Type	Local	Distant	Both	Fabricator	Consumer	Retailer	Other
Portable Sawmills	44	10	23	74	3	6	1
Stationary Sawmills	63	16	40	111	29	25	6
Other Mills	14	11	7	12	20	2	3
Total	121	37	70	197	52	33	10

Summary and Conclusion

The changing pattern of land use away from tillage and grazing has been responsible for the development of wood crops which are finding uses in a variety of markets. Whether the wood resource attracts the market or the market discovers the raw material, the fact remains that woodland owners benefit both by numerous outlets and choices of end use.

There are well over 500 wood-using industries securing raw material in New Hampshire. Thus in relation to land area there is a market at no great distance from the source of all raw material. On the basis of figures alone, one mill or market is present for each eleven square miles of land area.

In the present study, 268 mills were sampled. From this group 248 reported a volume of 315,130,000 board feet purchased from landowners. Ninety-two percent of these landowners had woodlands of 15 to 500 acres in area. These holdings are in the small ownership class.

Fifty-nine percent of all sawmill owners have forest land of their own. This may be taken as a stabilizing factor since it serves as a direct source of raw material and involves mill management with forest crop production.

The average number of years in business is 22 for sawmills, 27 for other mills, and 78 for pulp and paper manufacturers.

The principal species used are white pine and hemlock. Two-thirds of the total industry depends upon these two species. Seventy-five percent make purchases of logs, thus offering the owner an opportunity to utilize his labor and transportation facilities.

In making stumpage purchases, 43 percent of the wood-using industries still depend upon ocular estimates. All others follow recognized measurement practices. The New Hampshire or caliper rule is used in log buying by 46 percent of the industry. Thirty percent use the International and 24 percent use some other log rule or mill tally.

Quality requirements are indicated by price ranges quoted by some of the mill buyers. No direct reference is made to log grades.

The average log size at mills sawing white pine was found to be 10 feet long and 9.1 inches in diameter at the small end. Since larger logs produce higher lumber grades, the small size used in pine mills indicates scarcity in high grade lumber output.

Stationary mills quote higher prices for logs than is true of portables. There is a geographic difference in prices of stumpage and logs within the State. Highest prices are paid in the two counties of Carroll and Grafton.

No sizeable area in the State lacks either forest resources or wood-using industries. The increased interest in timberland ownership by industry points out advantages which may be gained in raising forest crops.

New Hampshire produces a variety of valued species for which there are large and favorable markets.

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